

REMARKS

Claims 1-10, 12-21, 29-40, and 66-74, of which claims 1, 29, and 30 are independent in form, are presented for examination.

Claim Rejections – 35 U.S.C. § 103

The Examiner has rejected claims 1-6, 8-10, 13, 14, 16, 29, 30, 32-40, 66-70, and 72-74 under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 3,911,094 (“Megahed”) in view of JP 10-284075 (“Maruta”).¹

Claims 1-6, 8-10, 13, 14, 16, 29, 30, 32-40, 66-70, and 72-74 recite methods that include combining a nickel hydroxide and a hydroxide salt to form a dry mixture, and contacting the dry mixture with humidified ozone to form a nickel oxyhydroxide. But claims 1-6, 8-10, 13, 14, 16, 29, 30, 32-40, 66-70, and 72-74 are not obvious in view of Megahed and Maruta, because a person of ordinary skill in the art would not have been motivated to combine Megahed with Maruta, and even if a person of ordinary skill in the art would have been motivated to combine Megahed with Maruta, the result would not have been a method covered by any one of claims 1-6, 8-10, 13, 14, 16, 29, 30, 32-40, 66-70, and 72-74.

Megahed discloses a method for preparing tetravalent nickel oxyhydroxide. (See, e.g., Megahed, col. 1, lines 64-67.) The method includes mixing a dry alkali metal hydroxide with a dry nickel hydrate (Ni(OH)₂), and dry ozonating the resulting mixture to produce tetravalent nickel oxyhydroxide. (See, e.g., *id.*, col. 2, lines 26-29.) Megahed fails to disclose or suggest a method that includes contacting a dry mixture with humidified ozone to form a nickel oxyhydroxide. However, the Examiner has asserted that a person of ordinary skill in the art would have been motivated to modify Megahed's method by combining Megahed with Maruta,

¹ In one part of the Office Action, the Examiner stated that claims 1-6, 8-10, 13, 14, 16, 29, 30, 32-40, 66-70, and 72-74 were rejected under 35 U.S.C. § 102(b) as anticipated by Megahed in view of Maruta. (See October 19, 2005 Office Action, page 2.) However, this rejection was provided under the heading “Claim Rejections – 35 U.S.C. § 103”, and appears to actually be an obviousness rejection under 35 U.S.C. § 103(a). (See, e.g., *id.*, pages 2-3.) Thus, Applicants have treated the rejection based on Megahed and Maruta as an obviousness rejection under 35 U.S.C. § 103(a), and have responded accordingly.

and has claimed that this combination would have resulted in a method including contacting a dry mixture with humidified ozone to form a nickel oxyhydroxide.

But a person of ordinary skill in the art would not have been motivated to modify Megahed's method, let alone to modify Megahed's method by combining Megahed with Maruta. Megahed explains that his method results in a stable tetravalent nickel oxyhydroxide that is "an effective and efficient cathodic material for use in both primary and secondary batteries." (See id., col. 2, lines 13-16.) Megahed further notes that primary cells including his nickel oxyhydroxide cathode material "display unexpectedly low degrees of cell bulging and good capacity retention as a result of the . . . NiOOH stability in the cell[s]." (See id., col. 7, lines 31-36.) Upon reading this, a person of ordinary skill in the art would not have been motivated to modify Megahed's method of making nickel oxyhydroxide, let alone to modify Megahed's method by combining Megahed with Maruta.

Furthermore, even if a person of ordinary skill in the art would have been motivated to modify Megahed's method by combining Megahed with Maruta, which Applicants do not concede, the combination would not have resulted in a method covered by any one of claims 1-6, 8-10, 13, 14, 16, 29, 30, 32-40, 66-70, and 72-74.

Maruta, like Megahed, discloses a method of making nickel oxyhydroxide. (See, e.g., Maruta, ¶0006.)² Maruta's method includes adding nickel hydroxide powder to an aqueous alkaline solution (e.g., a sodium hydroxide solution) to form a dispersion, and passing ozone and/or oxygen through the dispersion. (See, e.g., id., ¶0006 and ¶0010.) According to the Examiner, the ozone becomes humidified by being passed through the dispersion, and a person of ordinary skill in the art would have been motivated to use this humidified ozone in Megahed's method. (See October 19, 2005 Office Action, page 3.) But assuming without conceding that this is correct, the resulting method would not have included combining a nickel hydroxide and a hydroxide salt to form a dry mixture, and contacting the dry mixture with humidified ozone. As explained above, in order to obtain his "humidified ozone"³, Maruta passes ozone through a dispersion, which clearly is not a dry mixture. Thus, even if Maruta's "humidified ozone" were

² Applicants submitted an English translation of JP 10-284075 in an Information Disclosure Statement filed on February 10, 2005. Applicants refer to this English translation herein as "Maruta".

³ Applicants do not concede that Maruta discloses the formation or use of humidified ozone.

used in combination with Megahed, the resulting method would at most include combining nickel hydroxide and a hydroxide salt to form a wet mixture (here, a dispersion), and contacting the wet mixture with ozone. The resulting method would not include combining a nickel hydroxide and a hydroxide salt to form a dry mixture, and contacting the dry mixture with humidified ozone. Accordingly, claims 1-6, 8-10, 13, 14, 16, 29, 30, 32-40, 66-70, and 72-74 are not obvious in view of the combination of Megahed and Maruta, and Applicants request that the rejection of claims 1-6, 8-10, 13, 14, 16, 29, 30, 32-40, 66-70, and 72-74 be withdrawn.

The Examiner has rejected claims 7, 17, and 71 under 35 U.S.C. § 103(a) as unpatentable over Megahed in view of Maruta, and further in view of U.S. Patent No. 4,481,128 ("Jackovitz"). Jackovitz discloses a Ni(III) hydroxide type material "prepared by ozonation of an alkali metal cation containing aqueous slurry of hydrated Ni(II) hydroxide". (See, e.g., Jackovitz, col. 1, lines 48-68; col. 2, lines 63-67.) The operating temperature of the ozonation process "is usually about 20°C, but can be as high as about 50°C." (See, e.g., *id.*, col. 4, lines 34-35.) After ozonation, Co(OH)₂ can be added to the Ni(III) hydroxide. (See, e.g., *id.*, col. 4, lines 36-44.) According to the Examiner, upon reading Jackovitz, a person of ordinary skill in the art would have been motivated to use cobalt oxyhydroxide and/or an ozonation temperature of from 20°C to 50°C in the method resulting from the combination of Megahed and Maruta. But assuming without conceding that this is correct, the resulting method still would not have included all of the elements of claims 7, 17, and 71 because, as explained above, the combination of Megahed and Maruta would not have resulted in a method that includes combining a nickel hydroxide and a hydroxide salt to form a dry mixture, and contacting the dry mixture with humidified ozone. Thus, Applicants request that the rejection of claims 7, 17, and 71 be withdrawn.

The Examiner has rejected claim 12 under 35 U.S.C. § 103(a) as unpatentable over Megahed in view of Maruta, and further in view of U.S. Patent No. 5,800,947 ("Köhler"). Köhler discloses a Ni/Cd or Ni/hydride storage battery that has a cathode including spherical nickel hydroxide particles. (See, e.g., Köhler, Abstract.) According to the Examiner, upon reading Köhler, a person of ordinary skill in the art would have been motivated to employ spherical nickel hydroxide particles in the method resulting from the combination of Megahed

and Maruta. But assuming without conceding that this is correct, the resulting method still would not have included all of the elements of claim 12 because, as explained above, the combination of Megahed and Maruta would not have resulted in a method that includes combining a nickel hydroxide and a hydroxide salt to form a dry mixture, and contacting the dry mixture with humidified ozone. Thus, Applicants request that the rejection of claim 12 be withdrawn.

The Examiner has rejected claims 15, 18, and 19 under 35 U.S.C. § 103(a) as unpatentable over Megahed in view of Maruta, and further in view of JP 2001-202956 ("Kodama").⁴ Kodama discloses a battery electrode active material that includes a nickel hydroxide and a second component including one of a list of different metals, such as gold. (See, e.g., Kodama, ¶0007.) In some embodiments, the second component can be in the form of a hydroxide. (See, e.g., id., ¶0022.) According to the Examiner, upon reading Kodama, a person of ordinary skill in the art would have been motivated to use gold hydroxide as an oxidation promoting additive in the method resulting from the combination of Megahed and Maruta. But assuming without conceding that this is correct, the resulting method still would not have included all of the elements of claims 15, 18, and 19 because, as explained above, the combination of Megahed and Maruta would not have resulted in a method that includes combining a nickel hydroxide and a hydroxide salt to form a dry mixture, and contacting the dry mixture with humidified ozone. Thus, Applicants request that the rejection of claims 15, 18, and 19 be withdrawn.

The Examiner has rejected claims 20, 21, and 31 under 35 U.S.C. §103(a) as unpatentable over Megahed in view of Maruta, and further in view of U.S. Patent No. 5,700,596 ("Ikoma"). Ikoma discloses an electrode including a nickel oxyhydroxide active material, cobalt, and cobalt hydroxide. (See, e.g., Ikoma, col. 4, lines 4-13.) According to the Examiner, upon reading Ikoma, a person of ordinary skill in the art would have been motivated to employ a bulk dopant such as cobalt in the method resulting from the combination of Megahed and Maruta.

⁴ Applicants submitted an English translation of JP 2001-202956 in an Information Disclosure Statement filed on February 10, 2005. Applicants refer to this translation herein as "Kodama".

Applicant : Paul A. Christian et al.
Serial No. : 10/086,807
Filed : March 4, 2002
Page : 11 of 11

Attorney's Docket No.: 08935-255001 / M-4975

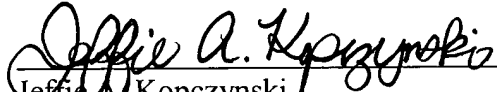
But assuming without conceding that this is correct, the resulting method still would not have included all of the elements of claims 20, 21, and 31 because, as explained above, the combination of Megahed and Maruta would not have resulted in a method that includes combining a nickel hydroxide and a hydroxide salt to form a dry mixture, and contacting the dry mixture with humidified ozone. Thus, Applicants request that the rejection of claims 20, 21, and 31 be withdrawn.

For at least the reasons listed above, Applicants believe that the claims are in condition for allowance, which action is requested.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: DECEMBER 15, 2005


Jeffery A. Kopczynski
Reg. No. 56,395

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110
Telephone: (617) 542-5070
Facsimile: (617) 542-8906